

# PNEUMATIC & HYDRAULIC PANELS

For

**HIGH  
INTEGRITY  
PRESSURE  
PROTECTION  
SYSTEMS**



**MADE IN ITALY**

**SIL**  
SUITABLE  
FOR SAFETY  
APPLICATION  
(IEC 61508 – 61511)

# Pneumatic & Hydraulic Panels for HIPPS systems

The **HIPPS** (High Integrity Pressure Protection System) is an application of safety instrumented system (SIS) with the function to protect downstream equipment against overpressure coming from the upstream. In the Oil & Gas the HIPPS system provides the pressure protection to pipelines, vessels and process equipments against overpressure and allows to use a lower design pressure downstream the HIPPS system.

A typical **HIPPS** system is mainly composed by the following elements:

- Initiators
- Logic Solver (electronic)
- Final Elements

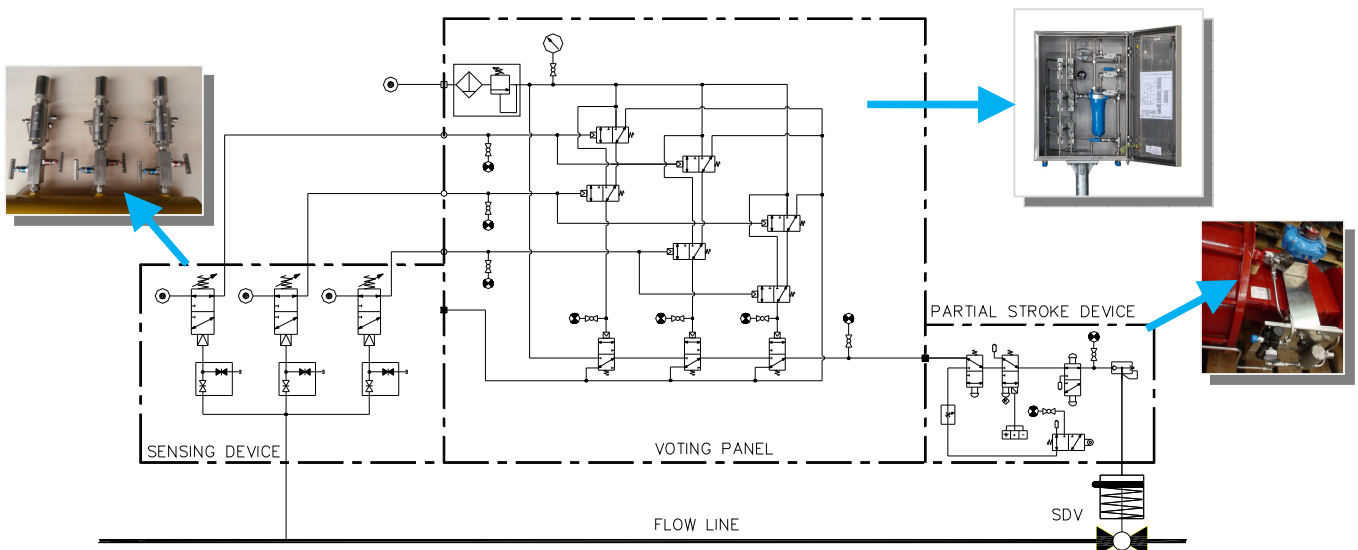
The pneumatic or hydraulic panel for **HIPPS** system is a good alternative to the system equipped with electronic Logic Solver. In its standard configuration it is mainly composed by the following three parts:

- **sensing device:** is composed by three pneumatic or hydraulic pressure switches connected to their own manifold. These pressure switches normally function autonomously, maintaining their own pressure signal always active, according to the calibration set established during design phase. In case the flow line gas pressure exceeds the expected alarm value, pressure switches send a shut down signal to the voting panel.
- **voting panel:** signals coming from pressure switches are processed by the pneumatic logic with 2 or 3 function and in case of high pressure they immediately send the shut down signal to the "SDV" (shut down valve) installed on the flow line that will have to close in less than 3 seconds.
- **partial stroke device:** this device is critical to ensure the efficiency of the safety system: in fact it is important for performing periodic tests (manual or automatic) of the "SDV" with no need to stop the work. The partial stroke device is also important for receiving a feed-back of the correct working (by means of a pneumatic lamp and/or a SPDT contact).

**Pneumoidraulica Engineering** is a designer and manufacturer of pneumatic control systems (sensing device + voting panel + partial stroke device) for **HIPPS** systems, completely designed on customer's specifications.

The high reliability level is reached by using both our "fail-safe" pneumatic directional control valves (EURO series) manufactured with a total stainless steel seal (without soft seal or other wearing parts) without stick-slip effect even in case of long stops in the same position and by our pneumatic pressure switches (PRP series) manufactured with special PTFE/FFKM seals.

Control panels are suitable to be integrated in a certified system that meet the needed requirements of safety integrity levels according to the regulation IEC 61508 and 61511.



## PNEUMATIC PRESSURE SWITCH

Working pressure:	min 0.3 barg / max. 700 barg
Supply pressure:	min. 0 barg / max. 21 barg
Working temperature:	-20°C / +130°C
Range:	from 0.5 barg to 350 barg
Differential:	fixed
Control media:	instrument air or gas
Process media:	gas - liquids
Body material:	AISI 316L SS
Internal parts material:	AISI 316L SS
Seal materials:	PTFE - FFKM
Valve connections:	1/4"NPT-F
Sensor connection:	1/2"NPT-M
Precision:	+/-2% f.s.
Rules:	NACE MR-01-75 / IEC 61508-61511



## PNEUMATIC DIRECTIONAL CONTROL VALVES

Working pressure:	min 0 barg / max. 21 barg
Working temperature:	-20°C / +80°C
Seal type:	metal to metal (fail safe)
Control media:	instruments air or gas
Body material:	AISI 316L SS
Internal parts material:	AISI 316L SS
Connections:	1/4"NPTF
Flow capacity:	1,700 NI/min
Response time:	0.050 seconds
Functions:	pneumatic with spring return
	pull-push button
	mechanic with spring return
	solenoid EEx-d with spring return
Rules:	NACE MR-01-75 / IEC 61508-61511





**PNEUMOIDRAULICA  
ENGINEERING**

Via dell'Edilizia, 81/83 - 36100 Vicenza (Italy)  
Tel. +39 0444 568014 - Fax +39 0444 569190  
[www.pneumoidraulica.com](http://www.pneumoidraulica.com) - [info@pneumoidraulica.com](mailto:info@pneumoidraulica.com)